

Twenty-Second Annual Report
of the
Commissioners
of the
State Reservation at Niagara
Oct. 1, 1904 - Sept. 30, 1905

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ENTRANCE TO PROSPECT PARK.

TWENTY-SECOND ANNUAL REPORT

OF THE

Commissioners of the State Reservation
at Niagara.

FROM OCTOBER 1, 1904, TO SEPTEMBER 30, 1905.

TRANSMITTED TO THE LEGISLATURE, MARCH 10, 1906.

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TWENTY-SECOND ANNUAL REPORT

OF THE

COMMISSIONERS OF THE STATE RESERVATION AT NIAGARA.

NIAGARA FALLS, N. Y., *March 10, 1906.*

To the Honorable JAMES W. WADSWORTH, *Speaker of the Assembly, Albany, N. Y.:*

Sir.—I herewith transmit, for the presentation to the Legislature of the State of New York, the Twenty-second Annual Report of the Commissioners of the State Reservation at Niagara, for the fiscal year ended September 30, 1905.

Yours respectfully,

CHARLES M. DOW,

President.

† 902

Niagara Falls Historical Society, Inc.

COMMISSIONERS.

CHARLES M. DOW, *President*, Jamestown, N. Y.

GEORGE RAINES..... Rochester, N. Y.

THOMAS P. KINGSFORD..... Oswego, N. Y.

ALEXANDER J. PORTER..... Niagara Falls, N. Y.

ALVAH K. POTTER..... Lockport, N. Y.

Treasurer and Secretary.

EDWARD H. PERRY, Niagara Falls, N. Y.

Superintendent.

EDWARD H. PERRY, Niagara Falls, N. Y.

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REPORT

To the Honorable Legislature of the State of New York:

The Commissioners of the State Reservation at Niagara, as required by law, submit their report for the year begun October 1, 1904, and ended September 30, 1905.

A Million Visitors.

In no normal year since the creation of the Reservation has popular appreciation of this great scenic preserve of the State of New York been so manifest as it has been during the twelve months just closed. Owing to the freedom of access to the Reservation and the lack of means for providing turnstiles and gate-men, even if desired, we have no means of making an actual count of the number of visitors, but careful estimates made by the Superintendent warrant us in stating that during the past year no less than 1,000,000 persons, from all parts of the world, visited Niagara. This is the largest number in any normal year in the history of the Reservation, having been exceeded only by the attendance of 3,000,000 during the Pan American Exposition at Buffalo in 1901.

There can be no more eloquent testimony than these figures as to the place which the Falls of Niagara hold in the interest of the world, nor a more convincing justification of the wisdom of the Legislature of the State in creating and maintaining this free Reservation for the edification of the people.

Notwithstanding the enormous responsibility of caring for the comfort and safety of so many persons, the year has passed without a single mishap or instance of serious disorder.

Net Cost of Niagara Less than 12 Mills per Visitor.

To present the wonderful spectacle of Niagara free to these 1,000,000 visitors, the State of New York has expended during the year less than one and one-fifth cents apiece for their instruction and pleasure. The Commission has had at its command the usual \$25,000 for maintenance, which, with a balance of \$5.15 brought over from the previous year, provided \$25,005.15 for maintenance; in addition to which it has expended \$95.79 on alterations to the Inclined Railway building. The total expenditures have therefore been \$25,100.94. The Inclined Railway earned \$11,406.55 during the same period; the carriage service, Cave of the Winds and Maid of the Mist concessions yielded \$2,200.00; and interest on deposits added \$18.70 more to the receipts, making a total of \$13,625.25 covered back into the State treasury. The net cost of the Reservation, therefore, was only \$11,475.69, or less than eleven and one-half mills per visitor. For the details of these receipts and disbursements, we refer you to the treasurer's report appended hereto.

Improvements During Past Year.

With these meagre resources, the Commission has barely been able to maintain the requisite standard of condition and efficiency, and nothing has been possible in the way of permanent improvements. The little summer-house between the Stone Arched Bridge and Prospect Point had deteriorated so far and had acquired such an unpleasant notoriety as a place of self-destruction that it was removed. Guard railings have been erected or renewed where needed. Over 250 loads of unsightly stumps, logs and dead trees have been removed. The roads have been kept in as good condition as possible but not as good as the heavy traffic demands.



THE FALLS OF NIAGARA.

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The old wooden stairway reaching from the spring on Goat Island to the top of the high bank has been demolished and a pathway substituted. A new path called the "Fisherman Trail" has been built along the river to the spring from the Stone Arched Bridge. The old wooden guideboards have been discarded and replaced by inconspicuous green-enameled metal signs, of uniform size, bearing white letters. The wooden platform and old rail at Terrapin Point have been removed and a landing of bowlders and gravel substituted. An independent telephone system has been installed, connecting the principal points of the Reservation with the superintendent's office. By partitioning off a point of the boiler-room in the Administration Building so as to accommodate the employees' lockers which were formerly in the north room in the basement, we have been able to convert the latter into a suitable room for visiting luncheon parties, and the north room has been fitted up exclusively as a mothers' retiring room. A contract has been let for the installation of an electric power plant in the Inclined Railway building.

The details of these and other works are set forth in the Superintendent's report appended hereto.

The Danger Line of Economy Reached.

While it may be a source of gratification to the people of the State, as it is to the Commissioners who represent them in the care of the Niagara Reservation, that so much has been done with so inconsiderable an expenditure of money, we cannot refrain from urging upon you the gravity of the situation which the long continued economy of the Legislature compels the Commissioners to face. The appropriation for maintenance last year was \$25,000,—no more than it has been for the last 13 years.

During those 13 years the number of visitors has increased from 500,000 to a million. It is not reasonable to expect that the increased responsibility for the care of the life and safety of an additional half a million human beings can be met properly, or that the increased wear and tear on roads, paths and general equipment can be repaired adequately, without some increased expenditure of funds. In respect to maintenance, as well as in other respects to which we will refer hereafter, we believe that the danger line of economy has been reached. It is not within the doctrine of chances that the ratio of risk to immunity should continue to increase indefinitely without mishap. The Reservation's record of safety, so far as the elements within the control of the administration have been concerned, has been unbroken, and we most earnestly wish that it should so continue. We therefore urge upon you the necessity of making the appropriation for maintenance this year \$30,000.

The Inclined Railway Condemned.

The condition of the Inclined Railway illustrates conspicuously the condition which we have described under the preceding head. This building was erected 32 years ago. It has been repaired from time to time and portions of the tracks, cables and machinery renewed occasionally, but the ravages of time, the wear and tear of constant use, and the deterioration due to exposure to mist and ice, have brought it to such a state that the Commissioners do not feel warranted in assuming the responsibility for its safety for more than a year longer.

In order that the solicitude of the Commissioners might be either confirmed by technical authority or dismissed as unwarranted, we requested the Hon. G. L. Heins, State Architect, last fall to direct an examination of the structure. Under his instruc-

tions dated September 8, 1905, D. M. Collier made the inspection, and under date of September 11, reported :

“Railway and structure are in a dilapidated condition, generally out of alignment, timber decayed, some broken, while the foundation of dry stone wall is of a temporary nature. Both railway and structure are beyond repairs, therefore should be entirely rebuilt. I do not consider it practicable to rebuild structure only. Furthermore, the condition of railway demands rebuilding equal to that of structure. Existing structure may not withstand the destructive forces of the unusual but occasional quantity of ice; but after the broken uprights and manifest weaker places are strengthened and patched, I consider the old railway safe for one more winter's operation and only one.”

This report, confirming as it does the opinion of the Commissioners, indicates the necessity for the immediate provision of a new structure of some sort to perform the function which the Inclined Railway has performed for a third of a century. In our opinion, the Inclined Railway should not be rebuilt. The system is slow and antiquated. The structure is unsightly and a blemish to the landscape at the point most frequented by visitors. And its unusual exposure to the elements makes it the object of all the destructive influences which have made necessary the continuous repair of the old structure.

We therefore recommend the installation of a double elevator, in a brick-lined vertical shaft and tunnel in the cliff, with underground waiting-rooms at the upper and lower terminals. For this and the construction of a free stairway, we ask for an appropriation of \$75,000.

The alternative to this is an appropriation of \$25,000 for the construction of a reinforced concrete inclined building from the

face of the cliff to the terminal station below; a complete new roadbed with concrete foundation; the removal of the upper terminal station and the construction of a subsurface waiting-room, operator's room, toilet room, etc.

When the importance of this structure is considered, and it is remembered that by its means nearly one-half of the maintenance of the Reservation is earned, we feel the wisdom of installing the more modern of these two equipments, and trust that you will provide the \$75,000 requested for the elevator.

Electric Lights Needed.

The charter of the Niagara Falls Power Company requires that it shall furnish to the Reservation, free of charge, electricity for light and power. For many years the Commission hesitated to avail itself of this privilege lest it might be construed as creating a contractual relation between the State and the Power Company. Upon advice by the Attorney-General that such action would not establish a contractual relation, the Commission voted, as stated in its Twentieth Annual Report, to accept the service.

Following this action, the Commissioners took the necessary steps for installing an electric power plant in place of the old hydraulic plant with which to run the Inclined Railway and this work is nearly completed.

In connection with this installation the question arose as to the point at which the Power Company was obliged to deliver its electricity, its nearest transmission cable being about 5,500 feet from the Inclined Railway. In order not to delay the work, the Power Company agreed to lay the connecting conduits and wires, with the understanding that if, prior to July 1, 1906, the Commissioners should install at least 100 electric lights for the illumination of the Park, the Power Company would sell the cables and

connections to the State for the nominal consideration of one dollar.

As the Power Company is to receive no compensation for either the power or electric light service, this offer is decidedly to the advantage of the Reservation, which, as we have stated in previous reports, is in need of more adequate illumination for public convenience and safety. We therefore earnestly request an appropriation of \$12,000 for the erection of electric lights.

Bridge Repairs Required.

The report of the Superintendent appended hereto quotes from the report of the State Engineer and Surveyor as to the requirements for bridge repairs. From this it appears that the bridges have maintained an excellent condition, but that minor repairs, costing about \$2,000, are necessary to prevent further deterioration. We therefore ask an appropriation of that amount.

Recapitulation of Appropriations Asked.

Following is a recapitulation of the appropriations for which we respectfully ask:

For ordinary maintenance:

Salary of the Superintendent.....	\$2,400 00
Inclined Railway operators and employees	4,300 00
Police, caretakers and watchmen on Goat Island Bridge	7,500 00
Administration building employees and janitors' supplies	1,700 00
Commissioners' expenses, Superintendents' traveling and office expenses....	1,600 00
Foremen and laborers and supplies.....	12,500 00
	<hr/>
	\$30,000 00

For installing electric elevator.....	\$75,000 00
For installing electric lights	12,000 00
For repairs to bridges	2,000 00
	<hr/>
	\$119,000 00
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Estimated Receipts.

The receipts for the next fiscal year are estimated to be as follows:

Inclined Railway receipts.....	\$11,500 00
Lessee of Cave of the Winds.....	1,500 00
Lessee of steamboat dock.....	600 00
Reservation carriage service	100 00
	<hr/>
	\$13,700 00
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International Waterways Commission Organized.

The International Waterways Commission, which was created at the suggestion of the late Hon. Andrew H. Green, president of the Commissioners of the State Reservation at Niagara, with a view to the prevention of the diversion of water from the Falls of Niagara, effected an organization during the past year.

The International Waterways Commission was appointed pursuant to section 4 of the River and Harbor Act approved June 13, 1902, which reads as follows:

Section 4. That the President of the United States is hereby requested to invite the Government of Great Britain to join in the formation of an international commission, to be composed of three members from the United States and three who shall repre-

sent the interests of the Dominion of Canada, whose duty it shall be to investigate and report upon the conditions and uses of the waters adjacent to the boundary lines between the United States and Canada, including all the waters of the lakes and rivers whose natural outlet is by the river Saint Lawrence to the Atlantic ocean, also upon the maintenance and regulation of suitable levels, and also upon the effect upon the shores of these waters and the structures thereon, and upon the interests of navigation by reason of the diversion of these waters from or change in their natural flow; and, further, to report upon the necessary measures to regulate such diversion, and to make such recommendations for improvements and regulations as shall best subserve the interests of navigation in said waters. The said commissioners shall report upon the advisability of locating a dam at the outlet of Lake Erie, with a view to determining whether such dam will benefit navigation, and if such structure is deemed advisable, shall make recommendations to their respective Governments looking to an agreement or treaty which shall provide for the construction of the same, and they shall make an estimate of the probable cost thereof. The President in selecting the three members of said Commission who shall represent the United States is authorized to appoint an officer of the corps of engineers of the United States army, one civil engineer well versed in the hydraulics of the Great Lakes, and one lawyer of experience in questions of international and riparian law, and said Commission shall be authorized to employ such persons as it may deem needful in the performance of the duties hereby imposed; and for the purpose of paying the expenses and salaries of said Commission the Secretary of War is authorized to expend from the amounts heretofore appropriated for the Saint Mary's River at the falls the sum of twenty thou-

sand dollars, or so much thereof as may be necessary to pay that portion of the expenses of said Commission chargeable to the United States.

Under date of the "American Embassy, London, July 15, 1902," the Hon. Joseph H. Choate, American Ambassador, addressed a letter to the Marquess of Lansdowne, K. G., etc., communicating the invitation of this Government to join in the appointment of an International Commission. The British Government, through its Foreign Office, accepted the invitation June 2, 1903.

On October 2, 1903, the President appointed as the American members Col. O. H. Ernst, Corps of Engineers, U. S. A., Chairman, whose address is the Mills Building, Washington, D. C.; Mr. George Clinton of Buffalo, N. Y.; and Prof. Gardner S. Williams of Ithaca, N. Y. Professor Williams, being prevented by his professional engagements from attending to the duties of the position, resigned, and was succeeded on June 8, 1905, by Mr. G. Y. Wisner, Civil Engineer, of Detroit, Michigan.

On January 10, 1905, the following gentlemen were appointed to represent Canada: Mr. W. F. King, Chief Astronomer, of Ottawa; Mr. J. P. Mabey, K. C., of Toronto; and Mr. Louis Coste, C. E., of Ottawa.

The full Commission met for the first time in Buffalo, N. Y., May 25, 1905, and decided that the headquarters of the American section should be in the Federal Building, Buffalo; and those of the Canadian section in Toronto.

Since many of the influences affecting the volume of water passing over the Falls of Niagara are remote,—as, for instance, the Chicago Drainage Canal, which, we are informed, has lessened the flow of Niagara River $4\frac{1}{2}$ per cent.—it is interesting to note the wide range of questions already considered by the Interna-

tional Waterways Commission. As stated in its "Progress Report" to the Secretary of War, December 1, 1905, they cover the following subjects:

(a) The uses of the waters at Sault Ste. Marie for power purposes and the regulations necessary to insure an equitable division of the waters between the two countries and the protection of the navigation interests.

(b) The uses of the waters in the Niagara River for power purposes and the regulations necessary to insure an equitable division of the waters between the two countries and the protection of Niagara Falls as a scenic spectacle.

(c) The alleged differences in the marine regulations of the two countries with respect to signal lights, and the advisability of adopting uniform signals for both countries.

(d) The advisability of building controlling works at the outlet of Lake Erie, including the effect upon the levels of the lakes and upon their shores, and upon the river St. Lawrence.

(e) The diversion southward by the Minnesota Canal and Power Company, of Duluth, of certain waters in the State of Minnesota that now flow north into the Rainy River and the Lake of the Woods.

(f) The effect of the Chicago Drainage Canal upon the levels of Lakes Michigan, Huron, Erie, and Ontario, and upon the river St. Lawrence.

(g) Delimiting the international boundary on the international waterways and delineating the same on modern charts.

(h) The suppression or abatement of illegal fishing on the Great Lakes.

(i) The location and construction of common channels.

(j) Regulations to govern navigation in narrow channels.

(k) Protection of shores from damage due to deepening of channels and increased speed.

As to the jurisdiction of the International Waterways Commission over some of these questions it is in doubt. The Canadian Commissioners are anxious to consider them all and to extend the jurisdiction of the Commission to all international waters between the Atlantic and Pacific Oceans, including such rivers as the St. John, which rises in Maine, crosses the border and flows through New Brunswick.

The American Commissioners say that it is desirable that Congress should define their status as a permanent executive board or else create a new board.

Niagara Commissioners Before the International Waterways Commission.

On September 14, 1905, the International Waterways Commission held a session at Niagara Falls, at which the President of the Commissioners of the State Reservation at Niagara, Charles M. Dow, and Commissioner A. K. Potter presented arguments in favor of international action to prevent the further diversion of waters from Niagara Falls. The addresses of Mr. Dow and Judge Potter are appended to this report beginning at pages 67 and 79 respectively.

Referring to this subject in its Progress Report of December 1, 1905, the International Waterways Commission says:

"Since it completed its organization in September, the Commission has made good progress in the collection of data bearing upon some of these questions, particularly those relating to the use of water at Niagara Falls, and to the regulation of the level of Lake Erie by works near its outlet. With reference to the

former, although not ready to report, it thought proper to pass, at its session of October 28, the following resolution, of which copies were sent to the Secretary of War of the United States, and the Minister of Public Works of Canada, viz.:

Resolved, That this Commission recommends to the governments of the United States and Canada that such steps as they may regard as necessary be taken to prevent any corporate rights or franchises being granted or renewed by either Federal, State, or provincial authority for the use of the waters of the Niagara River for power or other purposes until this Commission is able to collect the information necessary to enable it to report fully upon the "conditions and uses" of those waters to the respective governments of the United States and Canada.

President Roosevelt on the Reservation of Niagara Falls.

In our last annual report, we gave a full review of the legislation by the State of New York permitting the diversion of the waters of Niagara River from their natural channel above the Falls; and of the unremitting and consistent opposition which we have made to such grants. Year after year we have dwelt on the more than local importance of preserving the integrity of the cataract.

On December 5, 1905, the national importance of the subject was emphasized for the first time in an annual message of the President of the United States to Congress. The passage in President Roosevelt's message of that date, relating to scenic reservations, reads as follows:

"I call your attention to the generous act of the State of California in conferring upon the United States government the ownership of the Yosemite Valley and the Mariposa Big

Tree Grove. There should be no delay in accepting the gift, and appropriations should be made for the including thereof in the Yosemite National Park and for the care and policing of the park. California has acted most wisely as well as with great magnanimity in the matter. There are certain mighty natural features of our land which should be preserved in perpetuity for our children and our children's children. In my judgment the Grand Canyon of the Colorado should be made into a national park. It is greatly to be wished that the State of New York should copy as regards Niagara what the State of California has done as regards the Yosemite. Nothing should be allowed to interfere with the preservation of Niagara Falls in all their beauty and majesty. If the State cannot see to this, then it is earnestly to be wished that she should be willing to turn it over to the national government, which should in such case (if possible in conjunction with the Canadian government) assume the burden and responsibility of preserving unharmed Niagara Falls, just as it should gladly assume a similar burden and responsibility for the Yosemite National Park, and as it has already assumed them for the Yellowstone National Park. Adequate provision should be made by the Congress for the proper care and supervision of all these national parks. The boundaries of the Yellowstone National Park should be extended to the south and east to take in such portions of the abutting forest reservation as will enable the government to protect the elk on their winter range."

Senator Platt's Joint Resolution for a New International Commission.

On January 24, 1906, the Hon. Thomas C. Platt of New York, introduced in the United States Senate a joint resolution (S.

R. 24) "Authorizing the President of the United States to invite the Government of Great Britain to join in the formation of an international commission to examine and report upon the diminution in the volume of the water passing over the Falls of Niagara." The text of the resolution is as follows:

"Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the President of the United States be, and he is hereby, authorized to invite the Government of Great Britain to join in the formation of an international commission, to be composed of four members from each country, whose duty it shall be from time to time to report upon the condition and uses of the waters adjacent to the boundary line between the United States and Canada and particularly the waters of the Niagara River above the Falls of Niagara, and also upon the effect upon the shores of these waters by reason of their diversion from their natural flow, and further to report upon the necessary measures to regulate such diversions, having in view the protection of the Falls of Niagara against such diminution of the flow of water over said falls as to impair their natural beauties.

"The President is authorized to appoint the United States members of such commission, and said commission is authorized to employ such surveyors, experts, and other persons as it may deem needful in the performance of the duties hereby imposed.

"The sum of twenty thousand dollars is hereby appropriated to pay the portion of the expenses of said commission chargeable to the United States, including the compensation of the commissioners representing the United States and of surveyors, experts and other necessary services."

Senator Platt's joint resolution was read twice and referred to the Committee on Foreign Relations.

Congressman Burton's Joint Resolution Enlarging the Powers of the International Waterways Commission.

On January 18, 1906, the Hon. Theodore E. Burton, of Cleveland, Ohio, introduced in the House of Representatives a joint resolution (H. J. Res. 83) "for a report, and so forth, upon the preservation of Niagara Falls." It read as follows:

"Resolved, by the Senate and House of Representatives of the United States of America in Congress assembled, That the members representing the United States upon the International Commission created by section four of the river and harbor act of June thirteenth, nineteen hundred and two, be requested to report to Congress, at an early day, what action is, in their judgment, necessary and desirable to prevent the further depletion of water flowing over Niagara Falls; and the said members are also requested and directed to exert, in conjunction with the members of said Commission representing the Dominion of Canada, if practicable, all possible efforts for the preservation of the said Niagara Falls in their natural condition."

The resolution passed the House of Representatives February 1st and was transmitted to the Senate, where, on February 2d it was read twice and referred to the Committee on Forest Reservations and the Protection of Game.

We are informed by Senator Platt that the solution of the question proposed by this bill would be quite as satisfactory to him as the passage of the joint resolution offered by him.

Governor Higgins on the Protection of Niagara.

The Hon. Frank W. Higgins, Governor of the State of New York, who has always been a cordial supporter of the movement for the protection of Niagara, expressed himself in the following words in his message to the Legislature January 3, 1906:

“More than twenty years ago the State of New York sought to redeem the Falls of Niagara from vandalism by restoring the surrounding scenery to its primeval beauty and creating a State Reservation as a free pleasure ground for the people. It has spent large sums of money in the establishment and maintenance of the Reservation and many thousands of visitors enjoy its privileges yearly. This State and the Dominion of Canada have in the past been engaged in an unworthy rivalry in granting franchises of incalculable value to power-development companies permitting them to take water from the Niagara River above the falls for commercial purposes. The privileges granted to these companies now constitute a real menace to Niagara. The State of New York cannot carry on the work of preservation effectively without the aid of an international agreement to protect the cataract and the river from spoliation. It can, however, in some degree, repair the mischief already done (1) by limiting the amount of water which may be taken from the river by the New York companies now engaged in developing power, (2) by repealing all undeveloped charters, of which several remain on our statute books, dormant if not defunct, and (3) by instituting legal proceedings for the forfeiture of the charters of any companies which may be guilty of misuse of their franchises or abuse or usurpation of powers. I earnestly desire to impress upon the Legislature a due sense of the responsibility of this State for the protection and preservation of the grandeur and beauty of Niagara Falls.”

Assemblyman Foelker's Bill to Limit the Use of Niagara Waters.

Following the first recommendation made by Governor Higgins, the Hon. Otto G. Foelker, of Brooklyn, introduced in the New York Assembly, February 7, 1906, “An act to regulate and control

and to limit the use of the waters of Niagara River" (Int. 535; printed 571). The bill read as follows:

"Section 1. Corporations organized under the laws of the State of New York, and foreign corporations doing business in the State of New York, and firms and individuals carrying or conducting business in the State of New York, now engaged in developing power for commercial purposes by the use or the diversion of the waters of the Niagara river above the falls shall be limited and restricted, from and after the passage of this act, to a quantity of water equal to the quantity now being lawfully taken by them respectively from said river.

"§ 2. Each and every private corporation organized under the laws of the State of New York now engaged in developing power for commercial purposes by the use or diversion of the waters of Niagara river above the falls, shall, if they hereafter use said waters in excess of the amount now actually and lawfully used by them, respectively, be liable to a forfeiture of their respective charters in an action to be brought for that purpose by the Attorney-General in the name of the people of the State of New York; and upon the commencement of such action and during any stage thereof, and in the final judgment to be rendered therein, the people shall be entitled to an injunction restricting the use of such excess.

"§ 3. Each and every foreign corporation having a place of business, or conducting any business in the State of New York, involving the use for commercial purposes of the waters of the Niagara river above the falls, shall, upon the violation of section one of this act, forfeit any and all right to conduct business in the State of New York.

"§ 4. Every individual violating the provisions of the first section shall be liable to forfeit and pay to the people of the State

of New York the sum of fifty dollars for each horse power used or developed by them, respectively, in excess of the amount now lawfully used by them from and after the passage of this act; and upon the commencement of an action in the name of the people to recover such penalty or penalties, the people shall have as matter of right, at any stage thereof, to an injunction to restrain the use of such excess, and be entitled to such injunction in the final judgment. Penalties hereunder shall be cumulative.

“§ 5. All acts and parts of acts inconsistent with this act are hereby repealed.

“§ 6. This act shall take effect immediately.”

Legislative Inquiries as to Niagara Power Charters.

On the evening of February 5, 1906, the Hon. W. S. Shanahan, of Brooklyn, introduced in the New York Assembly a resolution calling for an investigation by the Assembly Judiciary Committee of the charters granting power rights in the Niagara River. The resolution declares that the franchises already granted carry “rights for diversion of water from the Niagara River above the falls sufficient to endanger the very existence of the American Falls.”

At the same session, the Hon. Otto G. Foelker, of Brooklyn, introduced a resolution calling upon the Attorney-General to furnish all the information he has regarding these corporations.

*A Constitutional Amendment Proposed for the Protection of
Niagara.*

On February 5th, the American Scenic and Historical Preservation Society transmitted to the Hon. Robert L. Cox, member of Assembly from Buffalo and Chairman of the Judiciary Com-

mittee for introduction in the Legislature, the draft of a proposed Concurrent Resolution, providing for the submission to the people of a Constitutional Amendment prohibiting the granting of further charters to divert water from Niagara River. The resolution reads as follows:

“Section 1. Resolved (if the Senate concur) that article seven of the constitution be amended by adding thereto a section numbered eleven and reading as follows:

“ARTICLE VII.

“§ 11. No charter, license or privilege to divert from their natural channel the waters of the Niagara river or any portion thereof above Niagara Falls shall be granted to any corporation, association, person or persons except for sanitary, domestic or fire purposes, and such waters shall not be diverted for any purpose except as herein expressed. This section shall not be construed to affirm or impair the existing charter of any corporation, association or persons, or to affirm, impair or deny any right to divert the water of said river existing prior to the adoption of this section.

“§ 2. Resolved (if the Senate concur) the foregoing amendment be referred to the Legislature to be chosen at the next general election of senators and in conformity with section one, article fourteen of Constitution, be published for three months prior to the time of such election.”

Where the Protection Power Lies.

It is evident from the utterances of the President and Governor, the abundance of proposed legislation, and the articles in the public press that the subject of the salvation of Niagara Falls

is acute in the public mind at the present time. The question naturally arises, where does the protective power lie?

To the extent of the jurisdiction of this Commission, the protection of Niagara Falls is absolute. Not a drop of water is diverted from the river within the borders of the Reservation for commercial purposes and not a commercial structure is permitted to disfigure the landscape within the area of its control. If a policy as rigid as this were followed by the Commissioners of the Queen Victoria Niagara Falls Park on the Canadian side (who permit both the intaking of water and the erection of power houses within their reservation), the danger to the falls would be greatly diminished. If the same policy were extended by the New York State Government, the Dominion Government, and the National Governments on both sides, from the falls to Lake Erie, the danger would be almost completely eliminated. The menace to Niagara Falls lies entirely outside of the State Reservation, and nothing can be gained by ceding the Reservation to the Federal Government.

The power to protect Niagara Falls lies, as above intimated, in the following four quarters:

1. The Legislature of the State of New York, which, we believe, should revoke all unused charters for the diversion of water, limit the unlimited active charters, and pass a Constitutional Amendment prohibiting further grants of this sort.

2. The Parliament of the Dominion of Canada, which should take corresponding action on the Canadian side.

3. The Government of the United States, which should at once exercise the power which it now has to prevent the lowering of the level of the Niagara River as a navigable stream and international boundary; and to negotiate an international treaty to secure co-ordinate action by Great Britain; and

4. The Government of Great Britain, whose coöperation, *pari passu*, is absolutely essential to the effectiveness of any measures taken by our Government.

The situation is more fully reviewed and reasons more fully given in an article entitled "How to Protect Niagara Falls," by the President of the Commission, which appeared in "The Outlook," January 27, 1906, and which is reprinted herewith (page 83 et seq.) by permission of The Outlook Company.

Respectfully submitted.

CHARLES M. DOW,

ALEXANDER J. PORTER,

GEORGE RAINES,

THOMAS P. KINGSFORD,

ALVAH K. POTTER,

Commissioners.

Report of the Superintendent
OF THE
STATE RESERVATION AT NIAGARA
FOR THE
FISCAL YEAR ENDING SEPTEMBER 30, 1905.



CROW ISLAND, AS SEEN FROM GOAT ISLAND;

Copyright 1905 by O. E. Dunlap.

REPORT.

To the Commissioners of the State Reservation at Niagara:

GENTLEMEN.—I have the honor to submit the following report of work upon the Reservation during the fiscal year ended September 30, 1905.

Biddle Stairway and Inclined Railway.

Pursuant to instructions from your honorable body, the State Architect has caused to be made an inspection of the Biddle Stairway and Inclined Railway. His report covering the Biddle Stairway declares same to be in a very fair condition. That covering the Inclined Railway declares the two terminal stations to be in very good condition while the structure covering the railway, the tracks and stairs are reported to be in "a very dilapidated condition and would cost as much to put in proper repair as a new structure." Repairs of a temporary nature have been made under the direction of the State Architect, who now reports that under ordinary conditions the structure "is safe for one more winter's use, but for one only."

The necessity of providing a new and safe means of reaching the lower river at this point must be apparent to all. The last Legislature appropriated \$5,500 for rebuilding the cover of the railway, but, as the railway tracks and free stairway have, since the adjournment of the Legislature been declared to be unsafe, additional funds will be required before a start can be made.

Bridges.

The report of the State Engineer and Surveyor on the condition of the several bridges upon the Reservation has been re-

ceived. That portion of his report relating to the new stone arch bridges contains no recommendations for work to be done, declaring that "the present condition of the two concrete steel bridges are all that could be expected." For the portion covering the two suspension bridges, the bridges leading to Terrapin Point and the steel bridge leading to Luna Island, I quote his report in full.

*"Inspection and Recommendations Covering the Two Suspension
Bridges Leading to the Sister Islands.*

"I found the superstructure part of these bridges in good condition, except some of the wooden railing and a few of the walk plank. The concrete anchorage blocks seems to be in good condition. I would recommend a thorough overhauling of the capped or inclosed part of the wooden railing, with a view of replacing any defective parts, also the repainting of the entire railing, as to the condition of the planking on these bridges; this can best be ascertained by taking up a few and examining them. I would suggest the removal of the earth from the cable turnbuckles, where they enter the concrete anchorage, so as to expose them to the air, also repaint these turnbuckles back from the anchorage for at least ten feet.

"It is evident that the rocks upon which most of the cast iron columns rest, which support the cables, should have some better protection than they now have; their present somewhat impaired condition is evidently due to the action of the water. I believe this new protection should be in the form of good Portland cement concrete, to the extent, probably of 40 or 50 cubic yards. This amount cannot be definitely ascertained until the water can be turned from these particular supporting rocks by coffer dams and a close examination made.

*" Inspection and Recommendations Covering the Bridge Leading
to Terrapin Rock.*

" This bridge consists of a short wooden bridge leading from Goat Island to the steel bridge, the steel bridge leading from said wooden bridge to the landing or platform on Terrapin Rock.

" The above-mentioned wooden bridge while comparatively safe for the present, should be quite generally overhauled by another season and several of the wooden posts should be replaced by new white oak posts. The railing on this wooden bridge should be painted and possibly some of the wooden joists and planking replaced, the condition of the joists and planking can best be ascertained at the time the bridge is overhauled.

" The superstructure part of the above-mentioned steel bridge is all in good condition, except that the railing steel I-beams, stringers and steel posts or supports between the supporting bowlders should be scraped and thoroughly repainted, all of the four large bowlders on which this steel bridge rests should be underpinned with Portland cement concrete and Portland cement grout poured into the voids of the masonry, that has been built on top of some of these bowlders for the purpose of preparing a level support for the bridge.

" I estimate that it will require about 18 cubic yards of concrete and about 7 cubic yards of grout to preserve these bowlder supports in a good safe condition. The water at these points can with very little expense and trouble be diverted and wooden forms erected for the purpose of placing the concrete underpinning.

*“Inspection and Recommendation Covering the Steel Bridge
Leading to Luna Island.*

“The substructure for this bridge is in good condition, no repairs needed. The superstructure is in good safe condition but has evidence of not being kept properly painted, especially on the underside. I would recommend that all exposed steel work be scraped and repainted and that the concrete covering of the walk at each end of the bridge over the abutment be removed (probably for a width of 20 feet) so as to expose the steel work resting on the abutment, for the purpose of readily removing all rust on the ends of the beams and repainting with a good durable bridge paint, after this portion of the concrete walk is relaid. I recommend cleaning out any cracks that appear in the said concrete walk and filling these cracks with heated asphalt.

“General.

“I believe all of the above-mentioned repair work can best be done under the supervision of the Superintendent of the Reservation, who is constantly on the ground and would be able to study the different situations and be prepared to take advantage of the frequent occurrences of low water to get in some of the most important coffer dams and forms to receive the concrete for required underpinning.

“None of this work requires skilled help, beyond what is regularly employed on the Reservation.

“I would recommend for any of the above-mentioned concrete work the mixture to be proportioned as follows:—

“One part Portland cement, two parts sand and four parts broken stone or gravel, which shall pass through a one and one-quarter inch ring.”

The expense of the work required will be so great that it will be impossible to do it without a special fund for that purpose, and I would recommend that you ask for at least one thousand five hundred dollars for same.

Summer-House and Railings.

The small summer-house between the new stone arched bridge and Prospect Point had become so dilapidated and bore such an unsavory reputation on account of the many suicides committed from that point that it was deemed wise to remove it. Just below where this little summer-house stood the bank slopes quite sharply to the river, making a dangerous place in the daytime and particularly so after night. An iron guard railing 96 feet long has been constructed at that point. A new guard railing has also been erected on the south side of Luna Island just below the bridge leading from Goat Island.

Dead Trees and Logs.

Some two hundred and fifty loads of logs and stumps have been removed from near the roads and walks upon Goat Island. In addition, a number of dead trees and stumps have been removed from Prospect Park.

New Machinery.

As authorized, I have purchased an "Austin Western Road Machine," a heavy road roller, a one-horse lawn mower, a one-horse arm mowing machine and a heavy plow. For the protection of this machinery from the elements a large shelter has been erected in the gravel pit on Goat Island.

Roads.

During the spring and summer much work was done upon the roads on Goat Island. While the roads were greatly im-

proved by the work it is very evident that such work as we are able to do with funds available from the maintenance account is not sufficient to put the roads in the condition that the heavy traffic demands.

Reservation Carriage Service.

As directed by you, the Superintendent has executed a five-year lease with John C. Level, for the privilege of carrying passengers upon the Reservation. This lease has, with your consent, been assigned to John C. Level, Incorporated.

During the season just closed the lessee has purchased and placed in commission, six electric automobiles with a carrying capacity of twenty-five people each. It is needless to say that the automobiles have become very popular and are giving the best of satisfaction.

All wagonettes used in the service have been equipped with three and one-half inch tires and the service rendered by the lessee has been of the very best and above reproach.

Maid of the Mist.

The Maid of the Mist Steamboat Company had two boats in commission during the season. The service rendered has been up to the usual standard of excellence.

Cave of the Winds.

The privilege of conducting visitors through the Cave of the Winds was let to Hon. George W. Wright who has so satisfactorily conducted the business under private and State ownership since 1868.

Fisherman Trail.

A new path, or rather trail, has been constructed along the river bank from the stone arch bridge to the spring on Goat



ELECTRIC AUTOMOBILES NOW IN USE UPON THE RESERVATION.

Island. This pathway winds in and out among the trees, sometimes just above the water line and again several feet higher, and has very appropriately been named "Fisherman Trail." It sprung into popular favor at once and is very much used.

The old wooden stairway which formerly furnished the means of reaching the spring from the top of the high bank has been removed and an inclined gravel pathway substituted therefor, the old bank graded and covered with heavy planting of trees, shrubs and grass.

Signs.

All of the old wooden signs have been discarded and new, heavy enameled metal signs of uniform size, with dark green background and white letters adopted. These new signs are small and inconspicuous while the white letters stand out sufficiently prominent to catch the eye. Only as many signs as are necessary for safety and convenience are used.

Liberty Pole.

The steel liberty pole standing at the entrance to Prospect Park has been carefully scraped, all crevices and joints filled with white lead and the pole painted with two coats of the best white lead paint. A new copper eagle covered with gold leaf has been placed on the pole in place of the old wooden one, which had become badly dilapidated.

Refuse Cans.

Six large galvanized iron refuse cans, lettered "Deposit Refuse Here," have been placed in Prospect Park, and I am pleased to report that the visitors use them to a marked degree, thus saving much litter about the park.

Crest Line of the Falls.

Mr. W. Carwell Hall, representing the United States Geological Survey, has made a survey of the crest line of the American and Horseshoe Falls. The results of this survey will be carefully prepared by Prof. G. K. Gilbert of the above-mentioned department and will undoubtedly be ready for publication in the next annual report.

Telephone System.

An independent system of telephones has been installed upon the Reservation connecting the office of the Superintendent with the Inclined Railway, Green Island, Cave of the Winds, Horseshoe Fall and Three Sister Islands. It is now possible for the Superintendent to keep in closer relation with all parts of the Reservation and to direct the different forces with more ease than formerly. This system also very materially aids in policing the Reservation.

Mothers' Retiring Room.

A partition has been erected in the boiler-room of the Administration Building, separating same from the coal bunkers, the employees' lockers removed from the north room in the basement to the boiler-room, where all tools, etc., are now stored, the north room having been converted into a room suitable for lunching by visitors, while the south room has been completely overhauled, it having been necessary to remove all of the old plaster and put on new before it could be decorated. This room has been furnished with rockers, mirrors, tables, etc., and is used exclusively as a mothers' retiring room.

Catch-Basins.

In former years the water resulting from a thaw or heavy rain has flooded the stone walk leading from the Administration Build-



QUERCUS PRINUS. CHESTNUT OAK.

ing to the street, remaining until it naturally soaked away. A catch-basin has been placed in the lowest spot at the end of the walk which now carries away all surface water.

A new catch-basin and drain has also been built near the walk to Prospect Point opposite the Inclined Railway to carry away the water that has formerly caused so much trouble at that point.

High Water December 28, 1904.

During a very heavy southwest gale December 28, 1904, the water in the river rose so high that it flooded the upper ends of the Second and Third Sister Islands. Grave fears were entertained for the safety of the small suspension bridges as the water at one time was within less than a foot of the flooring. Ice was piled upon the islands to such an extent that it created a break-water and prevented the water from washing away the soil upon the islands.

An immense quantity of ice was floating upon the river, and as the water subsided this ice lodged upon the reefs in the American rapids. This ice eventually formed a jam which was added to daily until, on January 10 and 11, the water was so completely diverted that a person wearing rubber boots could have waded the narrow stream of water then flowing between Prospect Point and Goat Island.

Electric Power Plant.

As authorized by your honorable body, the Superintendent has advertised for and received proposals for the installation of an electric power plant for the operation of the Inclined Railway. The contract has been let to the Dobbie Foundry & Machine Company, who are now engaged in the work. This contract is for

the electric equipment inside of the Inclined Railway Building only, and as there were no State funds available with which to purchase and lay the necessary cables to transmit the power from Port Day (near which point the heavy transmission cables of the Niagara Falls Power Company passes the Reservation) and as the charter of the Niagara Falls Power Company requires them "to furnish free of charge electricity for light and also for power * * * for use of the State Reservation at Niagara," but does not specifically state at what point delivery of same shall be made, they have determined to build the connecting conduits, make all necessary connections, lay the necessary wires, etc., etc., from Port Day to the Inclined Railway. It is expected that this work will all be completed and the plant ready for use by the first of January, 1906.

Lighting System.

The Niagara Falls Power Company in supplying and placing the cables, etc., in the conduits upon the Reservation for the purpose of supplying electric power for the Inclined Railway also hoped and planned for a proper illumination of the Reservation by means of the same system and accordingly laid cables of sufficient size for that purpose. The late Wm. B. Rankine, Second Vice-President of the Niagara Falls Power Co., arranged for the placing of the wires as above stated and the company agreed "to maintain the conductors and connections until July 1, 1906, upon the understanding that if prior to said date the Park Commissioners shall install, ready for operation, at least one hundred 200 c. p. electric lights for the illumination of the park from the easterly end near Port Day and throughout the park," that company would "execute a bill of sale of such cables and connections to the Park Commissioners for the sum of \$1.00."

In order to take advantage of this very liberal offer, and to forever settle the question of ownership of this equipment, sufficient funds should be secured from the Legislature for the installation of the contemplated lighting system. It is estimated that this can be done for \$12,000 and I earnestly recommend that you make an effort to secure that amount.

Terrapin Point Platform.

The wooden platform and old rail at Terrapin Point has been removed and a landing of heavy bowlders and gravel substituted, around which has been erected a substantial five-rail guard railing of the standard adopted upon the Reservation.

Miscellaneous.

Electric lights have been placed in the Inclined Railway building over the stairs, in the two offices and in the lower toilet-rooms.

A new watering trough of modern pattern has been placed at the turnout near the Three Sister Islands and the watering trough on the Riverway removed from the south side of the street to the north side where it is more convenient for use and in a less conspicuous place.

The floors, stairs and outside woodwork of the Administration Building have been thoroughly cleaned and varnished.

The approach to the Suspension Bridge from the Third Sister Island has been lowered about eighteen inches, permitting the removal of all wooden platforms, steps and walks upon the Third Sister Island. Some slight filling and grading was all that was necessary to make all points of the island accessible and it now presents a natural ruggedness which is very pleasing in that locality.

Number of Visitors.

It is estimated that about one million persons visited the Reservation during the year, which clearly demonstrates that the Falls are growing in favor each year and is an argument for their preservation.

Maintenance.

I cannot close this report without making a plea for a larger fund for maintenance. Only by the most rigid economy in every department are we able to get through on the amount allowed and even then many very important matters cannot be attended to. If our maintenance fund could be raised to \$30,000 per annum we would be able to keep all portions of the Reservation in proper condition and would not be compelled to ask for special appropriations for small matters such as the repairs required to the bridges previously mentioned.

When we take into consideration that out of the \$25,000 now appropriated for maintenance, the salaries of the police force and Inclined Railway employees must be paid, and that none of the above-mentioned persons can properly be classed as park operatives in the usually accepted term, the amount allowed certainly does seem small.

Ordinarily the expense of policing a park is borne by the city within whose bounds the park is situated, but with the Niagara Reservation it is different. Few parks in this country maintain anything within their bounds which is as expensive to operate as the Inclined Railway and it should also be borne in mind that all receipts of the Reservation are turned over to the State and not applied on the operating expenses.

The amount appropriated for maintenance being \$25,000 and the amount remitted to the State Treasurer being \$13,625.25, leaves the actual cost for maintenance of one of the most difficult parks in the country to maintain, but \$11,374.75, certainly not a very heavy tax on the State of New York; just about \$100 per acre and one cent each for every visitor to Niagara Falls.

Receipts.

The receipts by the Superintendent during the fiscal year were as follows:

1904.

Inclined Railway, month of:

October	\$664 55
November	183 45
December	80 05

1905.

January	
February	328 80
March	236 75
April	140 70
May	525 80
June	1,000 25
July	2,584 65
August	3,800 15
September	1,861 40

Total Inclined Railway receipts.....	\$11,406 55
Lessee, Cave of the Winds.....	1,500 00
Lessee, Maid of the Mist.....	600 00

Reservation Carriage Service Co.....	\$100 00
Interest	18 70
	<hr/>
Total	\$13,625 25
	<hr/> <hr/>

All of which has been paid into the treasury of the State.

Respectfully submitted,

EDWARD H. PERRY,

Superintendent.

REPORT

OF THE

Treasurer of the State Reservation at Niagara

For the Fiscal Year Ending September 30, 1905.



THE OLD RACE.

TREASURER'S REPORT.

THE COMMISSIONERS OF THE STATE RESERVATION AT
 NIAGARA, in account with EDWARD H. PERRY, Treas-
 urer, for the fiscal year begun October 1, 1904, and ended
 September 30, 1905.

1904.

Oct.	1. Balance on hand this date.	\$5 15
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MAINTENANCE RECEIPTS.

Oct.	12. Quarterly advance from State Comptroller	\$6,250 00
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1905.

Jan.	28. Quarterly advance from State Comptroller	6,250 00
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April	27. Quarterly advance from State Comptroller	6,250 00
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July	31. Quarterly advance from State Comptroller	6,250 00
------	---	----------

25,000 00

*Special Appropriation. Chapter 599,
 Laws of 1903.*

1904.

Dec.	21. Payment by State Comptroller on account	\$70 37
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1905.

Jan.	14. Payment by State Comptroller on account	25 42
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95 79

RECEIPTS OF RESERVATION.

Inclined Railway.

1904.

Oct.	31.	Receipts for month of October.	\$664 55
Nov.	30.	Receipts for month of November	183 45
Dec.	31.	Receipts for month of December	80 05

1905.

Feb.	28.	Receipts for month of February	328 80
March	31.	Receipts for month of March..	236 75
April	30.	Receipts for month of April...	140 70
May	31.	Receipts for month of May....	525 80
June	30.	Receipts for month of June..	1,000 25
July	31.	Receipts for month of July....	2,584 65
Aug.	31.	Receipts for month of August.	3,800 15
Sept.	30.	Receipts for month of September	1,861 40
			<hr/>
			\$11,406 55

Rentals.

Reservation Carriage Service.....	\$100 00	
Cave of the Winds	1,500 00	
Maid of the Mist	600 00	
	<hr/>	2,200 00

Interest.

1904.

Oct.	12.	Manufacturers and Traders' National Bank	\$11 89
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1905.

Sept. 30. Manufacturers and Traders'

National Bank \$6 81

\$18 70Total

\$38,726 19

EXPENDITURES.

Maintenance.

Abstract No. CXLVII.

Date.	Voucher.	Name.	Amount.
1904.			
Oct. 25.	2404..	Edward H. Perry, Com- missioners' expenses, Superintendent's ex- penses, office	\$65 18
	2405..	Charles M. Dow, Com- missioners' expenses.	154 24
	2406..	Alexander J. Porter, Commissioners' ex- penses	10 95
Nov. 2.	2407..	Pay-roll, October	1,751 87
15.	2408..	Dobbie Foundry and Ma- chine Co., drainage..	5 08
	2409..	Evening Union Co., sta- tionery	32 75
	2410..	Elderfield - Hartshorn Hardware Co., In- clined Railway, build- ings	6 14

• \$ 902

Date.	Voucher.	Name.	Amount.
1904.			
Nov. 15.	2411.	Niagara Falls Hydraulic Power and Manufacturing Co., electric lighting	\$50 00
	2412.	Buffalo and Niagara Falls Electric Light and Power Co., electric lighting	11 80
	2413.	Buffalo and Niagara Falls Electric Light and Power Co., electric lighting	10 69
	2414.	Welch Bros., Inclined Railway, buildings, stationery	30 50
	2415.	Wm. S. Egerton, Prospect Park, Goat Island	75 00
	2416.	E. H. Hall, Commissioners' expenses	103 17
16.	2417.	Edward H. Perry, Commissioners' expenses, Superintendent's expenses, tools, office...	62 98
Dec. 2.	2418.	Pay-roll, November ...	1,654 87
15.	2419.	Buffalo & Niag. Falls Electric Light & Power Co., electric lighting	10 69

Date.	Voucher.	Name.	Amount.
1904.			
Dec. 15.	2420.	Eldertfield -- Hartshorn Hdw. Co., tools, in- clined railway, build- ings	\$32 54
	2421.	Niag. Falls Hyd. Power & Mfg. Co., electric lighting	50 00
	2422.	A. J. Walker, buildings, inclined railway	8 30
	2423.	Walbridge & Co., furni- ture and fixtures....	10 25
	2424.	Charlotte Haeberle, tools, inclined rail- way, Prospect Park..	11 50
	2425.	W. S. Humbert, Inc., drainage	26 25
	2426.	Touhey Coal Co., coal..	117 18
	2427.	D. D. Waldo, bridges..	61 84
22.	2428.	Edward H. Perry, office, Superintendent's ex- penses	38 30
23.	2429.	Alexander J. Porter, Commissioner's ex- penses	18 00
31.	2430.	Pay-roll, December....	1,502 15
			<hr/> \$5,912 22

Abstract No. CXLVIII.

Date.	Voucher.	Name.	Amount.
1905.			
Jan.	9.	2431..Buffalo & Niag. Falls Electric Light & Power Co., electric lighting	\$12 33
		2432..John G. Boston, Com- missioners' expenses..	100 00
		2433..G. Beaton, tools.....	7 20
		2434..Niag. Falls Hyd. Power & Mfg. Co., electric lighting	50 00
		2435..Elderfield - Hartshorn Hdw. Co., buildings, inclined railway, tools, iron railings...	48 28
24.	2436..	Nat'l Press Intelligence Co., office	5 85
24.	2437..	Elderfield - Hartshorn Hdw. Co., buildings, inclined railway, tools	13 33
24.	2438..	A. J. Walker, buildings, inclined railway	7 50
		2439..Niag. Falls Hyd. Power & Mfg. Co., electric lighting	50 00
		2440..Charlotte Haeberle, tools, walks.....	15 92

Date.	Voucher.	Name.	Amount
1905.			
Jan.	24. 2441..	Welch Bros., buildings, office, stationery.....	\$14 70
	26. 2442..	Edward H. Perry, in- clined railway, Com- missioners' expenses, Superintendent's ex- penses, office	82 78
Feb.	2. 2443..	Pay-roll, January.....	1,502 62
Mar.	2. 2444..	Pay-roll, February.....	1,412 38
	10. 2445..	Brandow Printing Co., office	2 50
	2446..	H. W. St. Clair, build- ings	45 10
	2447..	Phillip McQuillan, buildings	27 00
	2448..	Niag. Falls Hyd. Power & Mfg. Co., electric lighting	50 00
	2449..	Buffalo & Niag. Falls Electric Light & Power Co., electric lighting	12 48
	2450..	Walter Jones, Prospect Park	40 00
	2451..	J. P. Callahan Ice Co., ice	31 36
	2452..	Elderfield - Hartshorn Hdw. Co., buildings, tools, inclined rail- way	17 49

Date.	Voucher.	Name.	Amount.
1905.			
March 10.	2453.	Touhey Coal Co., coal..	\$103 30
	2454.	The Bell Telephone Co., Commissioners' ex- penses, Superinten- dent's expenses, office	26 85
20.	2455.	Edward H. Perry, office, Superintendent's ex- penses	79 37
	2456.	Alexander J. Porter, Commissioners' ex- penses	25 75
			<hr/> \$3,784 04
Abstract No. CXLIX.			
April 3.	2457.	Pay-roll, March.....	\$1,442 51
15.	2458.	Buffalo & Niag. Falls Electric Light & Power Co., electric lighting	11 90
	2459.	Buffalo & Niag. Falls Electric Light & Power Co., electric lighting, Inclined Railway	44 02
	2460.	Niag. Falls Hydraulic Power & Manufactur- ing Co., electric light- ing	50 00
	2461.	Edward H. Hall, Com- missioners' expenses.	84 05



WILD GRAPE BOWER ON GREEN ISLAND.

Date.	Voucher.	Name.	Amount.
1905.			
April 15.	2462.	The Bell Telephone Co., Commissioners' ex- penses, Superintend- ent's expenses, office.	\$15 10
	2463.	Elderfield - Hartshorn Hdw. Co., Inclined Railway, buildings, Prospect Park.....	71 76
	2464.	John Sandstrum & Son, buildings	9 68
	2465.	A. J. Walker, buildings, Inclined Railway....	7 50
	2466.	Elderfield - Hartshorn Hdw. Co., Inclined Railway	32 55
	2467.	Dobbie Foundry & Ma- chine Co., Inclined Railway	3 43
	2468.	E. O. Haynes, coal.....	36 90
21.	2469.	Edward H. Perry, office, Superintendent's ex- penses	90 83
May 1.	2470.	Pay-roll, April.....	1,524 45
22.	2471.	Charlotte Haerberle, In- clined Railway.....	5 88
	2472.	Bell Telephone Co., office, Commissioners' expenses, Superin- tendent's expenses..	20 70

Date.	Voucher.	Name.	Amount.
1905.			
May	22.	2473..Haeberle Lumber Co., tools, park seats.....	\$9 24
		2474..Niag. Falls Hyd. Power & Mfg. Co., electric lighting	50 00
		2475..Niag. Falls Hyd. Power & Mfg. Co., electric lighting	50 00
		2476..Buffalo & Niag. Falls Electric Light & Power Co., electric lighting	13 61
		2477..Elderfield - Hartshorn Hdw. Co., Inclined Railway, tools, build- ings	34 33
		2478..Brandow Printing Co., stationery	7 44
	23.	2479..Edward H. Perry, office, Commissioners' ex- penses, Superintend- ent's expenses.....	74 59
June	2.	2480..Pay-roll, May	1,839 56
		8. 2481..Bell Telephone Co., office, Commissioners' expenses, Superin- tendent's expenses...	23 05
		2482..A. J. Walker, buildings, Inclined Railway....	7 50

Date.	Voucher.	Name.	Amount	
1905.				
June	S. 2483.	Bannerman Chemical Co., disinfectants....	\$61 03	
	2484.	E. O. Haynes, coal.....	16 50	
	2485.	Nat'l Press Intelligence Co., office.....	73 20	
	2486.	F. W. Kelsey, Goat Isl- and	18 45	
	2487.	Wicker Lumber Co., buildings	78 84	
	2488.	Buffalo & Niag. Falls Electric Light & Power Co., electric lighting	12 12	
	2489.	A. J. Hoffman, roads..	166 50	
	2490.	Elderfield - Hartshorn Hdw. Co., Inclined Railway, tools, build- ings	59 33	
	2491.	G. & J. M. Rae, police..	35 75	
27.	2492.	Edward H. Perry, office, Commissioners' ex- penses	41 50	
			<hr/>	\$6,123 80

Abstract CL.

July	3.	2493.	Pay-roll, June.....	\$1,724 97
	12.	2494.	The Austin Western Co., tools	575 00

Date	Voucher.	Name.	Amount.
1905.			
July 12.	2495.	The Austin Western Co., tools	\$31 25
	2496.	Coldwell Lawn Mower Co., tools.....	82 20
	2497.	Adriance Platt & Co., tools	34 00
	2498.	Welch Bros., office, In- clined Railway.....	21 65
	2499.	The Bell Telephone Co., office, Commissioners' expenses, Superin- tendent's expenses...	19 15
	2500.	Elderfield - Hartshorn Hdw. Co., Inclined Railway, tools, office, iron railings, Goat Island	85 18
	2501.	C. E. Allen, seed.....	4 50
	2502.	F. E. Dean, roads.....	288 10
	2503.	Niag. Falls Hyd. Power & Mfg. Co., electric lighting	50 00
Aug. 1.	2504.	The Courier Co., fold- ing maps and guides.	79 50
	2505.	American Ticket Co., Inclined Railway....	76 50
July 21.	2506.	Edward H. Perry, office, Commissioners' ex- penses	31 55

Date.	Voucher.	Name.	Amount.
1905.			
Aug.	2.	2507..Pay-roll, July.....	\$1,687 25
	10.	2508..Wall Rope Works, In- clined Railway.....	179 23
		2509..A. J. Walker, Inclined Railway, buildings...	7 90
		2510..Elderfield - Hartshorn Hdw. Co., buildings, Inclined Ry., Pros- pect Park, tools, signs, bridges	135 43
		2511..Bell Telephone Co., office, Commissioners' expenses, Superin- tendent's expenses...	17 50
		2512..Jewell & Co., stationery.	15 00
		2513..Sterns Electric Equip- ment Co., office.....	12 00
		2514..P. C. Flynn & Son, buildings, Prospect Park	72 79
		2515..Howard H. Baker & Co., Prospect Park.....	28 00
		2516..Niag. Falls Hyd. Power & Mfg. Co., electric lighting	50 00
		2517..Buffalo & Niag. Falls Electric Light & Power Co., electric lighting	14 29

Date	Voucher	Name	Amount.
1905.			
Aug.	10.	2518..Buffalo & Niag. Falls Electric Light & Power Co., electric lighting	\$9 14
		2519..Niag. Falls Hyd. Power & Mfg. Co., electric lighting	50 00
	19.	2520..Edward H. Perry, office.	29 70
Sept.	2.	2521..Pay-roll, August.....	1,723 63
	30.	2522..Pay-roll, September....	1,658 38
		2523..Elderfield - Hartshorn Hdw. Co., tools, build- ings	20 82
		2524..Dobbie Foundry & Ma- chine Co., drainage..	5 15
		2525..Bell Telephone Co., Prospect Park, Goat Island	155 51
		2526..Bell Telephone Co., office, Commissioners' expenses, Superin- tendent's expenses...	23 80
		2527..Bell Telephone Co., office, Commissioners' expenses, Superin- tendent's expenses ..	22 60
		2528..Wicker Lumber Co., walks, bridges, build- ings	28 38

Date.	Voucher.	Name.	Amount
1905.			
Sept. 30.	2529.	Haeberle Lumber Co., tools	\$6 98
	2530.	Welch Bros., office, buildings	40 20
	2531.	Edward H. Perry, tools, office, Superintend- ent's expenses.....	66 86
	2532.	F. E. Dean Co., roads..	21 00
			<hr/>
			\$9,185 09

*Payments from special appropriation as per chapter
599, Laws of 1903.*

Abstract No. V.

1904.			
Dec. 15.	18.	Pay-roll, November	70 37

Abstract No. VI.

1905.			
Jan. 24.	19.	Charlotte Haeberle, alterations to Inclined Railway building.....	25 42

REMITTANCE TO STATE TREASURER.

1904.			
Nov. 2.	Draft for October receipts,		
	1904	\$676 44	
Dec. 1.	Draft for November receipts,		
	1904	183 45	
1905.			
Jan. 3.	Draft for December receipts,		
	1904	80 05	
March 2.	Draft for February receipts,		
	1905	328 80	

Date.	Voucher.	Name.	Amount.
1905.			
April	1.	Draft for March receipts, 1905.	\$236 75
May	8.	Draft for April receipts, 1905.	140 70
June	6.	Draft for May receipts, 1905..	525 80
July	3.	June receipts, 1905	1,000 25
Aug.	2.	Draft for July receipts, 1905..	3,184 65
Sept.	2.	Draft for August receipts, 1905	4,400 15
	30.	Draft for September receipts, 1905	2,868 21
			<hr/> \$13,625 25
Total			<hr/> \$38,726 19 <hr/>

CLASSIFICATION OF ACCOUNTS.

Maintenance.

Salaries	\$2,550 00
Police	3,298 25
Inclined Railway	4,900 78
Prospect Park	1,950 33
Goat Island	2,910 34
Buildings	2,133 13
Roads	2,043 61
Walks	1,298 09
Office	404 77
Electric lighting	683 46
Bridges	169 68
Tools	868 90
Commissioners' expenses	689 76
Coal	273 88
Ice	100 36



ULMUS AMERICANA. AMERICAN ELM. THE MONARCH OF GOAT ISLAND.

Iron railings	\$31 66	
Drainage	95 48	
Park seats	5 42	
Furniture	10 25	
Signs	66 50	
Disinfectants	61 03	
Stationery	65 19	
Seed	4 50	
Folding maps and guides.....	79 50	
Superintendent's expenses	310 28	
	<hr/>	\$25,005 15

Improvements Under Chapter 594,

Laws of 1902.

Alterations to Inclined Railway building.....	95 79	
	<hr/>	
Total	\$25,100 94	
Remittances to State Treasurer	13,625 25	
	<hr/>	
Total	\$38,726 19	
	<hr/> <hr/>	

EDWARD H. PERRY,

Treasurer.

We, the undersigned, hereby certify that we have examined the foregoing report of the Treasurer for the fiscal year ended September 30, 1905, the vouchers and other papers, and we find the report and accompanying documents correct, and that the Treasurer has properly accounted for all moneys received and disbursed by him during the fiscal year ended September 30, 1905.

ALEXANDER J. PORTER,

THOMAS P. KINGSFORD,

Auditing Committee,

Commissioners of the State Reservation at Niagara.

ADDRESS

OF

CHARLES M. DOW,

of Jamestown, N. Y.

*President of the Commissioners of the State Reservation at
Niagara.*

To the International Commissioners Appointed to Investigate
Concerning the Conditions and Uses of the Waters
Adjacent to the Boundary Lines Between
Canada and the United States.

At Niagara Falls, N. Y., September 14, 1905.

ADDRESS TO THE INTERNATIONAL COMMISSIONERS.

Gentlemen.—As President of the Commissioners of the State Reservation at Niagara, I welcome you to this place of meeting, and thank you for this opportunity to lay before you certain facts concerning the subject which you have under consideration affecting the interests of the people of the State of New York in the Falls of Niagara.

Although the scope of your inquiry embraces vast commercial interests tributary to the five great lakes and their outlets, yet it is a fact with which you are doubtless familiar that the federal legislation resulting in the creation of your Commission had its genesis in the apprehensions concerning the effect of artificial diversion of waters coming in the course of nature to Niagara Falls, and was proposed by my late predecessor as President of the Commissioners of the State Reservation at Niagara.

Therefore, while not unmindful of the great commercial interests involved in the 5,000 miles of great lake coast line in the United States and Dominion of Canada, I shall confine my observations solely to the consequences ensuing upon any further material diversion from the Falls of Niagara. Fortunately both sets of interests have much in common, and measures which will conserve one will conserve the other.

In the first place, let me say that the considerations affecting the property which we have in charge are very different from those affecting the strictly commercial questions which will absorb your attention elsewhere, and, we trust, will be approached by

you in a different mental attitude. There are large financial consequences involved in the maintenance of the volume of Niagara, of which we shall speak later, but first and foremost comes the very unusual but none the less important consideration of maintaining Niagara Falls as a great natural spectacle.

The State Reservation of Niagara was created solely for the preservation of the beauty and grandeur of this exceptional scene. It was done under no subterfuge of utilitarian ends. The purpose was frankly declared in the legislative act to be "the preservation of the scenery of the Falls of Niagara." In this action by the State of New York and the action soon following by the Dominion government, our two governments have undertaken a trust, to protect which we are morally responsible not only to the people of our respective jurisdictions, but also to the people of the civilized world.

Let us consider some of the physical facts affecting the volume of Niagara Falls and the causes for fear concerning its maintenance:

From June 10 to September 17, 1869, the United States engineers measured the volume of the Niagara river near its head and found the mean to be 273,329 cubic feet per second. For the past thirty-six years since its publication in 1869, this figure has been more frequently quoted than any other as representing the volume of water passing over the Falls of Niagara. As a matter of fact the discharge during that particular period was largely in excess of the average mean for an extended period, and later figures given by the United States engineers reduce the average mean flow for forty years to 222,400 cubic feet per second. To this may be added the inflow from streams entering the river between Lake Erie and the Falls, making 224,000 cubic feet per

second, the figure now generally accepted by engineers in their calculations. (See "The Menace to Niagara," by Dr. John M. Clarke, New York State Geologist, in "The Popular Science Monthly" for April, 1905.) A recent recalculation by Dr. Clarke gives 3,800,000 horse-power as the equivalent of this discharge.

Now it is self-evident that the volume of the falls as a whole will be reduced in proportion to any subtraction of water from the river above Goat Island, but the volumes of the American Fall and the Canadian Fall will be affected unequally for the following reasons:

1st. About six-tenths of a mile above the Falls the stream is divided by the apex of Goat Island. This point of division is about 750 feet from the American shore and 3,750 feet from the Canadian shore. If the cross-section of the river bed were horizontal, the gradient equal and the current parallel with the mid-stream line, this would divide the flow in the ratio of 1 to 5, giving the American Falls one-sixth and the Canadian Fall five-sixths of the flow.

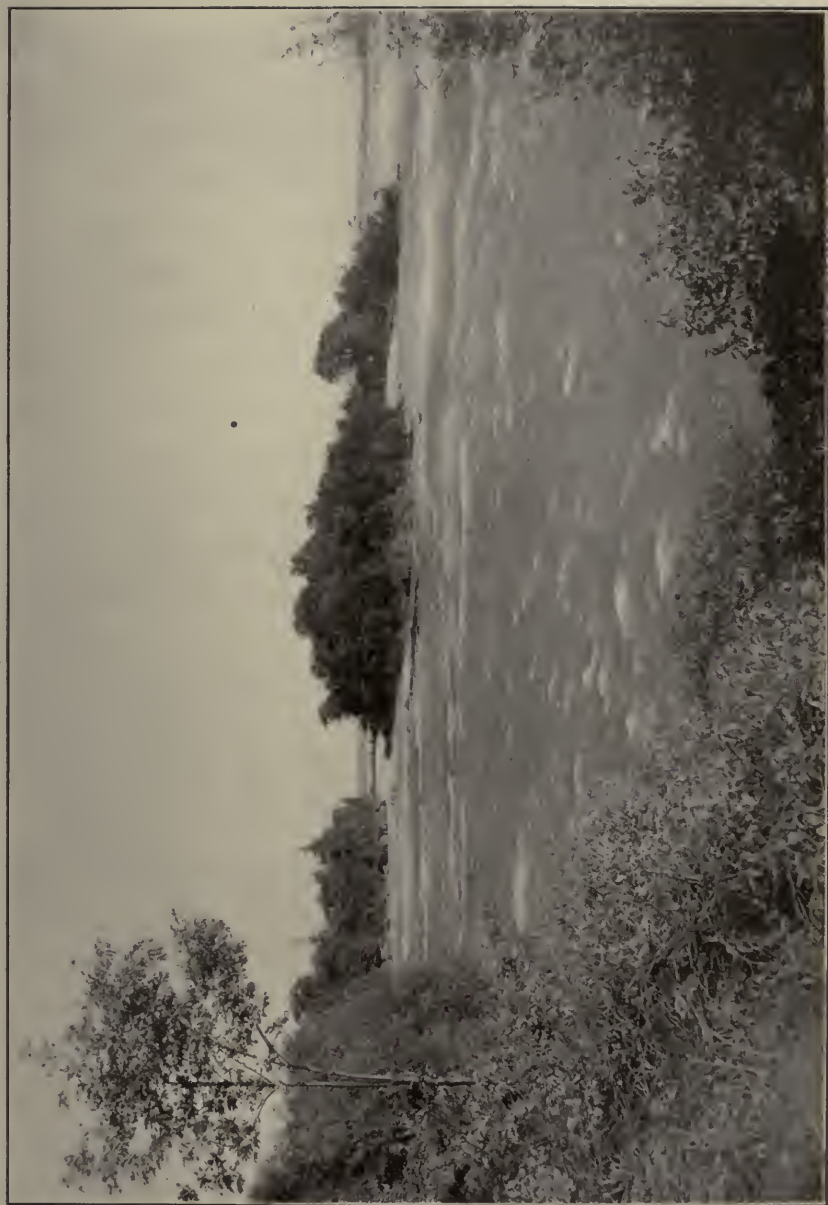
2nd. But the cross-section of the bed of the river is not horizontal, the bed being higher on the American side and tending to send the water by gravity toward the Canadian side. As a consequence the sill, or rock edge, of the American Fall is ten feet higher than the sill of the Canadian Fall, according to a statement of the State Geologist, made this year.

3rd. The channel widens from the parting of the waters at the head of Goat Island to the American Fall, thus spreading the small proportion of water received thinly over a crest line of 1,060 feet; while the channel on the other side contracts, tending to deepen the water passing over the Horseshoe Fall.

As the result of the first two factors, it is variously calculated that only from one-tenth to one-fifth of the volume passes over the American Fall. James Wilson, superintendent of the Queen Victoria Niagara Falls Park, estimates 10 per cent. as the American Fall's quota. Isham Randolph, advisory engineer to the Canadian Commission, estimates it at 15 per cent. An engineer consulted by the State Geologist of New York, estimates it at about 18 per cent.

As the result of the third factor previously mentioned—the widening and contracting of the respective channels,—the discrepancy in depth of water on the Falls is made even greater. This difference is apparent in many ways. In winter time, cakes of ice eighteen inches thick touch the sill of the American Fall in passing over, while they flow freely over the Horseshoe Fall. The American cataract is too feeble to move the limestone rocks that lie at its foot, while the rocks from the Horseshoe Fall are moved and spun by the tremendous volume of the cataract. Another index is the rate of erosion and recession of the Falls, which is about three times as rapid on the Horseshoe as on the American Fall. In plotting the crest lines of the Falls, engineers can see the outlines of the American sill through the water with sufficient distinctness to survey it readily, but on the Horseshoe Fall the position of the sill can be determined only by other criteria.

A competent hydraulic engineer, at the request of the State Geologist, has calculated that the subtraction of 40,000 cubic feet per second (about 18 per cent.) from the Niagara river above Goat Island will draw the water down to the rock-bottom edge of the American Fall, leaving a miserable little film, dribbling over the sill; and that the subtraction of 40,000 cubic feet more,



THREE SISTER ISLANDS. AS SEEN FROM GOAT ISLAND.

Copyright 1905 by O. E. Dunlap.

or 80,000 cubic feet per second in all, will dry up the American channel completely, while the Canadian channel will still be an object of interest.

Now let us see what preparations have been made to lead us to that lamentable result:

In 1902 a syndicate applied to the Commissioners of the Queen Victoria Niagara Falls Park for permission to erect a new power plant on the Canadian side. The three companies already installed there protested vigorously but unsuccessfully, and the new plant was authorized. In the account of the investigation conducted by the Commissioners, which appears in their seventeenth annual report, the following figures appear:

Water required for charter developments now in operation on Canadian side:

	Cubic feet per second
Ontario Power Co.	12,000
Toronto & Niagara Power Co.....	11,200
Canadian Niagara Power Co.....	8,900
	<hr/>
Total.....	32,100
Four new developments suggested.....	29,996
	<hr/>
	62,096
	<hr/> <hr/>

American developments now in operation and arranged for, call for the following volumes of water:

	Cubic feet per second.
American Niagara Falls Power Co.....	8,600
Niagara Falls Hydraulic & Manufacturing Co.....	7,700
	<hr/>
Total on American side.....	16,300
Total on Canadian side.....	62,096
	<hr/> <hr/>

The advisory engineer, Isham Randolph, continued: "78,396 cubic feet per second out of a total of 222,400 cubic feet per second, or an appropriation of $35\frac{1}{4}$ per cent of the available water to develop power, leaving 144,006 cubic feet to continue the scenic effects of the cataract."

But Mr. Randolph has taken into account only a portion of the chartered developments on the American side. The American Niagara Falls Power Company can consume twice 8,600 cubic feet per second without exceeding its charter. The charter of the Niagara, Lockport & Ontario Power Company contains no limit. The same may be said of other existing charters.

The facts show that the complete extinction of the American Fall and the serious reduction of the Canada Fall are imminent. Such an event would be a national loss from which we may well ask you to devise some sort of protection. When power companies contend among themselves over the lowering of their water levels by rival companies, we deem it our duty, and it has been our consistent policy, to stand between them all and the public interests in the level of Niagara Falls themselves, which we regard of paramount importance.

My argument for the preservation of the beauty of Niagara Falls thus far has been based solely on æsthetic considerations—popular appreciation of their sublimity and national pride in them.

There is another and more material phase of the question, however, which cannot be overlooked.

The State of New York has invested in this Reservation about \$2,500,000 counting appropriations for purchase, improvements, maintenance and interest. Whatever impairs the value of Niagara Falls as a spectacle, impairs the value of that investment.

In the next place, about 800,000* persons visit Niagara Falls every year. It would be difficult to compute the amount of income which this brings to the railroads, hotels, merchants and other business people of the State. A single railroad company, the New York Central, received \$170,000 in fares during the three summer months of 1902 on account of its Niagara business alone. If these 800,000 visitors spent only \$1.25 apiece within the State on account of Niagara Falls, the business on this account would amount to a million dollars a year; and we believe that figure might be multiplied several times and yet be within the limits of probability.

It is no part of my duty to suggest the justice of some international agreement which will regulate the proportion of water to be diverted from the Niagara river to commercial uses on one side or the other, or of preventing diversions from the Great Lakes through drainage or commercial canals which will injure the financial interests at this point. The latter are fully competent to take care of themselves. But we do most urgently urge you to devise and recommend some international agreement by which the further abstraction of water from Niagara river for purely private enterprises shall be stopped at once. The legislature of the State of New York has formally recommended such a course, and we believe that their resolution faithfully reflects the sentiment of the people at large.

We do not interpose our objection to the construction of absolutely necessary public works, nor do we apprehend that the greatest danger to Niagara Falls is threatened by them. Commercial canals diverting waters to the Mississippi, Hudson or St. Lawrence rivers require small volumes of water compared with power

*The report of our Superintendent, received since the above was written, estimates the number of visitors during the past year at 1,000,000.

plants. The Erie canal now takes from Lake Erie only 600 cubic feet per second for about 200 days in the year. Fourteen such canals could draw water from the Great Lakes and not reduce the flow at Niagara as much as one power plant developing 100,000 horse power.

We believe that the Dominion of Canada and the United States have a common interest in the preservation of the Falls of Niagara. The treaty of Ghent, which fixed the international boundary in the Niagara river, devolves upon both governments the moral duty of protecting them. No conservative effort on the part of one can avail anything without the coöperation of the other.

We sincerely trust that the representatives of the Dominion of Canada and of the United States on your Commission may be so impressed with the responsibility of each government to the other and of both to the world, for the perpetuation of the grandeur of this scenic wonder, that your conference will be crowned with a treaty which will protect forever the beauty of Niagara Falls.

ADDRESS

of

ALVAH K. POTTER

of Lockport, N. Y.,

*Member of the Board of Commissioners of the State Reservation
at Niagara.*

To the International Commissioners Appointed to Investigate
Concerning the Conditions and Uses of the Waters
Adjacent to the Boundary Lines Between
Canada and the United States.

At Niagara Falls, N. Y., September 14, 1905.

ADDRESS OF ALVAH K. POTTER.

*To the International Waterways Commission of the United States
and Canada:*

GENTLEMEN.—The Commissioners of the State Reservation at Niagara Falls, New York, have requested your respective Commissions to lay before your several governments the urgent necessity of protecting the falls at Niagara from further depletion. With this in view, Mr. Dow, its president, has presented to your honorable body a brief setting forth important data and urging upon you the reasons, more particularly, for preserving the scenic beauties of Niagara.

At the request of our Commission, I desire to present to you certain other reasons, which are more particularly addressed to the legal and practical aspects of the question. There are two aspects of the question, international and national. I first ask your attention to the international aspect of the case.

The Niagara river is not only a national boundary, but it is, in contemplation of law, throughout its entire length, a navigable stream. The two countries which it separates are bound by treaty obligations and by the common law of each land, to maintain it as a navigable stream. The waters of Niagara river cannot be lowered upon one side without the corresponding loss of water upon the other side. The public, as such, which in the United States at least means the entire people, and I suppose the same is true in Canada, have the right to the use of the waters of Niagara river for purposes of navigation, and to require

of the Government that the navigability of the river be preserved from any encroachment upon the one side or the other. That the Niagara river throughout its entire length, is, in law a navigable stream and therefore subject to the laws which govern navigable streams and which give the people at large a right to the use of them has been held in the United States courts and in the courts of the State of New York; and it has also been held that this is so, notwithstanding the interruption of navigation by reason of the falls and the rapids. But the river is, in fact, navigable as far down as Port Day on the American side, and as far as Chipewewa on the Canadian side of the river, and has been in fact navigated to those points, and these are below the point at which water is likely to be taken from the river for hydraulic purposes. Briefly speaking, it is clearly within the power, and becomes the duty, of the respective governments to preserve the rights of the public of each country in this stream, for the purposes of commerce. It is a mutual obligation because, as I have said, any injury to navigation on either side is an injury to the rights of the public on both sides. And, if there should be injury to navigation upon one side, the country upon the other side would feel in duty bound to have such injury restrained, which might lead to undesirable international complications.

Upon the national side of the question, I address myself more particularly to the Commission appointed by the President of the United States. The Constitution distinctly gives to Congress the power to regulate commerce between the States and with foreign countries. It also gives to Congress the power to pass any legislation necessary thereto. The ordinance of 1787, establishing the Northwest Territory, distinctly provides that all waters leading

to the St. Lawrence river shall be kept open and free to the citizens of all the country; and this compact has been recognized as still in force by the Federal courts. The chart made for the United States under the supervision of Major Symons, in 1902, lays down the course of navigation to a point near Port' Day on the American side and also to Chippewa on the Canadian side, and shows that the depth of water along these lines will stand no further diminution if the river is to be kept as it has been, to these points, open to navigation. Mr. Dow, in his brief, has set forth the effect of concessions already made for hydraulic purposes upon the depth of water on the American side. It shows that the navigability of the stream is already threatened, and that it is liable to be considerably injured when the concessions already made have been put into use.

For the reasons I have stated, it is plain that it is not only within the power, but within the absolute duty of the United States Government to take steps, by appropriate legislation, or possibly by a treaty with Great Britain, to prevent the destruction of the rights of the public in this stream.

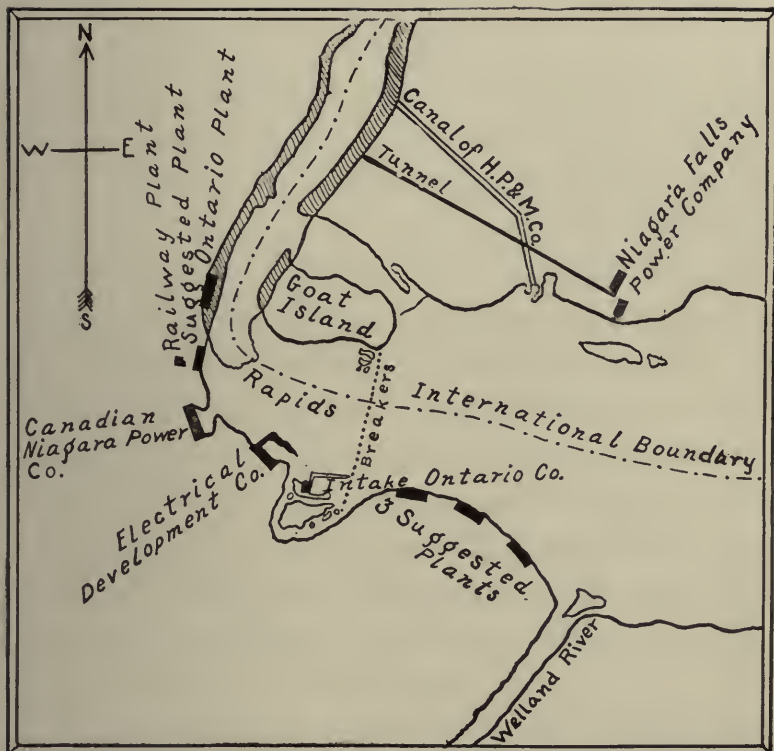
HOW TO PROTECT NIAGARA FALLS

By CHARLES M. DOW
of Jamestown, N. Y.

*President of the Commissioners of the State Reservation at
Niagara.*

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from *The Outlook* of January 27, 1906.

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NIAGARA FALLS AND THE NIAGARA RIVER
Showing the location of existing and suggested power plants

HOW TO PROTECT NIAGARA FALLS.*

[Reprinted by permission from *The Outlook* of January 27, 1906.]

BY CHARLES M. DOW,

*President of the Commissioners of the State Reservation at
Niagara.*

In the last week of the old year the following despatch appeared in one of the daily newspapers of the State of New York:

"Assemblyman (Blank), when informed that Governor Higgins would have something to say relative to the preservation of Niagara Falls in his message, said he presumed there would be some play to the galleries along that line, but, notwithstanding, the utilization of natural water power for the production of electrical energy would continue all over the State and country, and in twenty-five years Niagara Falls would be as the Falls of the Mohawk at Cohoes, only to be seen as a waterfall on Sundays and holidays when the power utilization plants were not running and the diverted water was allowed to follow its natural channels. For his part he thought it would be better to have the water thus used than forever running to waste."

This utterance is quoted solely because it accurately represents the feeling of large numbers of people. Coupling this feeling with the habit of capital to seize upon every opportunity for profit regardless of sentiments and emotions unconnected with the heaping up of wealth, we have a formidable menace to the Falls of Niagara, which, if not counteracted, will unquestionably bring about the result so much desired in the language quoted.

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This danger has recently aroused public attention and has stimulated into activity for the protection of the Falls the energy of the press, of several civic societies, and of a vast number of public-spirited citizens. The purpose of this article is to add to the exact knowledge of all such societies and persons, excite the interest of others whose attention has not been hitherto attracted to the subject, and to indicate in what manner protest against the threatened evil may be most practical and effective.

In the first place, the danger of the near extinction of the Falls as an object of overwhelming interest by the diversion of the waters is real. It has been difficult to impress this unwelcome fact upon the minds of a people whose imagination has been stirred for generations by the tremendous volume of the cataract, and to whom the inexhaustibility of Niagara has seemed as certain and enduring as the limitless power of the sun to give out heat and light. The volume of water in the river is a finite and measurable quantity. The flow has been measured for many years by the United States Engineer Corps, and it reports that the average flow of the river is 222,400 cubic feet per second, and that the minimum flow, so far as observed, was 165,340 cubic feet per second. Given this flow — and that the figures are substantially correct there is no doubt — we have next to inquire the amount of the abstraction of this water which has been authorized by the State of New York and by the Government of the Province of Ontario.

Upon the American side the State Reservation at Niagara, which is owned by the State of New York, occupies the shore of the river from a point below the American Fall to Port Day above the Falls, and although attempts have been made to procure the right to divert the water along this stretch of river front, all



THE AMERICAN FALLS FROM THE SOUTHERN END AT THE NORMAL STAGE OF WATER

Compare this with the view on the opposite page, which was taken from practically the same point of view under quite different conditions



THE AMERICAN FALLS AT A LOW STAGE OF WATER CAUSED BY AN ICE JAM

A comparison of this picture with that on the opposite page gives some idea of what will result if the Falls are not protected

(Photograph copyrighted by O. E. DUNLAP)

such attempts have hitherto been defeated. At Port Day is situated the intake of the Niagara Falls Hydraulic Power and Manufacturing Company. This company conducts water by a canal extending through the city of Niagara Falls to the brink of the gorge below the falls, and utilizes the water at the gorge. It is authorized to take water through a canal 100 feet wide with the uniform depth of 14 feet. The precise amount of water which can be diverted through this canal has not been accurately determined, or, if thus determined, has never been made public. The amount has usually been assumed to be 7,700 cubic feet per second, but in response to a question of the International Waterways Commission, the president of the company has said that the flow would be from 8,000 to 10,000 cubic feet per second. It is reasonably safe to assume that the maximum figure — 10,000 cubic feet per second — is substantially correct.

Next above this canal is located the plant of the Niagara Falls Power Company. This company has the right to divert water sufficient to produce 200,000 effective horse-power. At the present time this company diverts the waters of the river into a canal communicating with penstocks in which are located the wheels producing power, and the waters are conducted through a tunnel approximately 7,000 feet long to the gorge of the river below the Falls. It has two power-houses in operation capable of producing 100,000 horse-power, and the waters necessary to divert for this purpose are rated at 8,600 cubic feet per second. In order to produce the additional authorized 100,000 horse-power, the construction of another tunnel would be necessary. To produce this amount of horse-power would require the diversion of at least 8,600 cubic feet of water per second, and hence the total amount which this company is authorized to divert amounts to

17,200 cubic feet per second. This, with the maximum of 10,000 cubic feet diverted by the Niagara Falls Hydraulic Power and Manufacturing Company, makes a total of 27,200 cubic feet per second which can now be lawfully diverted upon the American side.

In addition to the foregoing, the State of New York has authorized from time to time during the past twenty years a variety of companies to divert water from the river, but several of these have unquestionably lost their rights through failure to comply with the time limit prescribed by their charters. There are two such companies, however, the legal status of which is somewhat uncertain, viz., the Niagara Power and Development Company and the Niagara, Lockport and Ontario Power Company. No statutory restriction was placed upon the amount of water which either of these companies was authorized to use. There is some question whether the rights conferred upon them are now in existence, but this can only be settled, if it ever arises in a practical way, by legal adjudication. It is understood that neither of these companies is at the present time engaged upon any work looking to the diversion of water.

Passing now to the conditions existing upon the Canadian side of the river, there are four corporations in operation which have been authorized by the Government of Ontario to divert water for power purposes. The Canadian Niagara Power Company has the right to use 100,000 horse-power, which, it is estimated, requires the diversion of 8,900 cubic feet of water per second. The Ontario Power Company has two rights — one to carry water through three main feeder pipes eighteen feet in diameter to a power-house situate below the Falls, and the estimate given by the Canadian authorities as to the amount of water which will



THE AMERICAN CHANNEL ABOVE THE FALLS AT A NORMAL STAGE OF WATER



THE RAPIDS SHOWN ON THE OPPOSITE PAGE, AT A LOW STAGE OF WATER

be diverted by these three pipes is substantially 12,000 cubic feet per second. This company has also a right to conduct water from the Welland river, which flows into Niagara river just above the rapids, but the amount of water which can be abstracted under this permission has never been determined and may probably safely be omitted from any calculations made in this article. The Electrical Development Company has the right to produce 125,000 horse-power, and the estimated amount of water required to produce this maximum amount of power is 11,200 cubic feet per second.

In addition to the foregoing, an electrical railway company has the right to divert water to a certain amount in the operation of its road, which amount, however, is quite small, and is generally estimated at about 400 cubic feet per second.

These are all the rights which have been granted by the Government of Ontario up to the present time.

In the year 1903 the Government of Ontario procured a report from an eminent hydraulic engineer upon the possibility of additional plants capable of generating electric power on a large scale with waters of Niagara river. The report of this engineer suggested four additional plants with a total water consumption of 29,996 cubic feet per second — practically 30,000 cubic feet. One of these suggested sites was located near the Horse-shoe Falls, and the remaining three on the shore of the river above the rapids and below Welland river. The sites of all the existing and suggested plants are shown upon the accompanying map.

The present situation may, therefore, be summed up as follows, the figures given being that of cubic feet of water diverted from the stream each second:

AUTHORIZED DIVERSION.

Niagara Falls Hydraulic Power and Manufacturing	
Company	10,000
Niagara Falls Power Company	17,200
Canadian Niagara Power Company	8,900
Ontario Power Company	12,000
Electrical Development Company	11,200
Electric Railway Company	400
<hr/>	
Total	59,700

Or practically 60,000 cubic feet per second.

Suggested diversion, 30,000.

The right to divert 60,000 cubic feet per second is an accomplished fact. The prevention of future diversions is the end to which the energies of all lovers of the Falls must be directed.

A clear understanding of the situation can be had only by careful consideration of the effect of the authorized diversion of the waters. Much speculation has been indulged in on this subject without full consideration of the topographical features. It must be borne in mind that the Falls consist of two parts — the American Fall and the Horseshoe Fall. The division of the waters of the stream to supply these two falls occurs above the head of Goat Island. There has been a considerable diversity of opinion as to the proportion of water passing over the American Fall. It has been stated as low as ten per cent. and as high as twenty-five per cent. A careful consideration of the situation will, I think, establish that this percentage cannot well exceed ten per cent. A cross-section of the stream based upon actual soundings just above the head of the rapids, taken in connection with the width of the American channel at the head of Goat Island

and that of the Canadian channel at the same point, seems to establish that ten per cent. is a fair and reasonable estimate of this amount.

The power plants upon the American shore are both in operation, and it is safe to assume are now taking from the stream not exceeding 15,000 cubic feet per second. They unquestionably use to some extent water which would flow over the Canadian Fall, and it may be stated without fear of successful contradiction that the effect of taking a limited quantity of water from the stream above the rapids at any given point situated a measurable distance from the point of diversion cannot be calculated or stated with accuracy.

We have next to consider the effect of the abstraction of water by the plants already authorized upon the Canadian side. It will be seen by reference to the map that all of these plants divert water from the stream below the head of the rapids. These rapids extend for a distance of about three-quarters of a mile above the Horseshoe Falls, and the fall in this distance is about fifty-five feet. At the head of these rapids is a large breaker extending from the Canadian shore toward the head of Goat Island, creating a cascade of several feet, and it is apparent that the taking of water from the stream below this cascade will not divert water to any appreciable extent, if at all, from the American channel. Hence, all the power plants now authorized upon the Canadian side to take water to the extent of 32,500 cubic feet per second will not affect the American Fall, but only the Horseshoe Fall.

Three of the suggested plants upon the Canadian side to be situated between Dufferin Islands, which are substantially at the

head of the rapids, and Welland river, will take water from the stream above the rapids, and will, therefore, to a greater or less extent affect the American Fall.

The fourth suggested plant, with a capacity of a little upward of 7,000 cubic feet per second, is located below the head of the rapids near the Horseshoe Falls. With the exception of this suggested plant, the river front between the crest of the Horseshoe Falls and the head of the rapids is now entirely occupied for power purposes. It is possible, however, that the capacity of the Electrical Development Company plant can be doubled, this increasing the suggested diversion, affecting the Horseshoe Falls alone to about 18,000 cubic feet per second.

Some detailed figures may here be profitably considered. The average flow of the entire stream being 222,400 cubic feet per second, the amount passing through the American channel will be on the average about 22,000 cubic feet per second, and through the Canadian channel about 200,000 cubic feet per second. The authorized diversion from this latter channel below the head of the rapids is 32,500 cubic feet per second, or about one-sixth of the total average flow. The authorized abstraction is a fixed quantity, while the flow of the river varies, and we must, therefore, take into consideration its minimum flow. Upon the assumed basis of nine-tenths passing through the Canadian channel, the minimum flow is 152,406 cubic feet per second, and of this the authorized diversion is 32,500 cubic feet, or about twenty-one per cent. of the minimum flow. This will be the result when companies with plants now constructed or in process of construction have come into full operation, and a result which cannot be avoided by any known means. It needs no argument

to show that this authorized diversion will seriously affect the Horseshoe Falls and make imperative the most strenuous efforts to prevent their further depletion.

The effect of taking water from the river above the head of the rapids cannot be so accurately calculated. The average flow through the American channel upon the assumed basis of one-tenth is shown 22,000 cubic feet per second, and at the minimum stage the flow will be about 16,900 cubic feet per second. The entrance to this channel at the head of Goat Island is only a little over 700 feet in width, while the length of the crest of the fall is nearly 1,100 feet. Therefore a slight reduction in the depth of the water at the entrance to the channel will seriously affect the appearance of the volume of water flowing over the crest. No accurate survey of the channels in the river sufficient to determine the effect upon the American Fall of a diversion upon the Canadian side has yet been made. It is certain, however, that even at the minimum flow of the river the appearance of this fall is most seriously affected. But few photographs have been taken at low water. Those in existence demonstrate that the majesty of this fall and of the rapids above it is practically annihilated with the water at the lowest observed stage. Any further abstraction of the water above the head of the rapids must unquestionably, during the lower stages, result in the destruction not only of the beauty but of the sublime power of this most magnificent fall.

The foregoing review of the actual conditions now existing warrants the following summary:

1. No further diversion of water on the American side below the plant of the Niagara Falls Power Company can be had without occupying the river front within the bounds of the State Reservation, and it is not in the least degree probable that consent

for this can be obtained from the Legislature of the State of New York.

2. Additional power plants upon the American side must take their water from the stream above the plant of the Niagara Falls Power Company, which would involve such great expense in carrying water to the gorge below the Falls that capital is not likely to undertake the scheme until the more profitable sites upon the Canadian side are occupied.

3. That there are at least four sites upon the Canadian side below the Welland River where water can be diverted with as favorable financial results as at the plants now existing.

4. That because of these facts further diversions of water are likely to take place first upon the Canadian side, and for this reason efforts to prevent such diversion must be directed to the Canadian authorities.

In his Message to Congress, December 4, 1905, the President of the United States directs attention to the question now under discussion, and says: "If the State of New York cannot take care of the Falls herself, it is earnestly to be wished that she should be willing to turn it over to the National Government."

This is a startling suggestion, and the source from which it proceeds demands that it receive careful consideration. It is apparent that the State of New York is not likely to turn over whatever rights it may possess to the General Government in order to prevent the State itself from further depleting the waters of the Falls. If it is the desire of the people of the State that the Falls should be preserved so far as possible in at least their present condition, they will undoubtedly continue to refuse to divert the waters, and will not turn over the Falls to the General Government for the mere purpose of preventing themselves from

working the devastation. Unquestionably the only power that the State of New York possesses is to refuse to permit further diversion of water on its side of the stream. It cannot in any manner control the diversion on the Canadian side, nor can it enter into any agreement with the Canadian Government that the latter shall prevent further diversions.

It is also apparent that if there is any power to negotiate with the Canadian Government upon this question, it now resides in the General Government; and that any cession from the State of New York to the General Government would not increase that power. It is, therefore, not apparent what practical effect for good would be had by any cession from the State of New York to the General Government, the immediate danger to be guarded against being likely to arise upon the Canadian side. This danger must be prevented by negotiations between the General Government and the Canadian Government; and this gives rise to the question what power the two Governments in conjunction may have over the entire question. Niagara river is an international boundary, and in point of law a navigable stream its entire length; and the Federal Government already has the right of jurisdiction over it, and has exercised such right. With the lakes it is an international highway, so made by the ordinance of 1787, establishing the Northwest Territory, and by treaty with Great Britain; and as such the National Government is bound to protect it. This was made very clear by Judge A. K. Potter, one of the Commissioners of the State Reservation at Niagara, in his able argument before the International Waterways Commission on the 14th of last September. The upper river is practically navigable from Port Day, at the upper end of the State Reservation, to Lake Erie. The water cannot be lowered on one

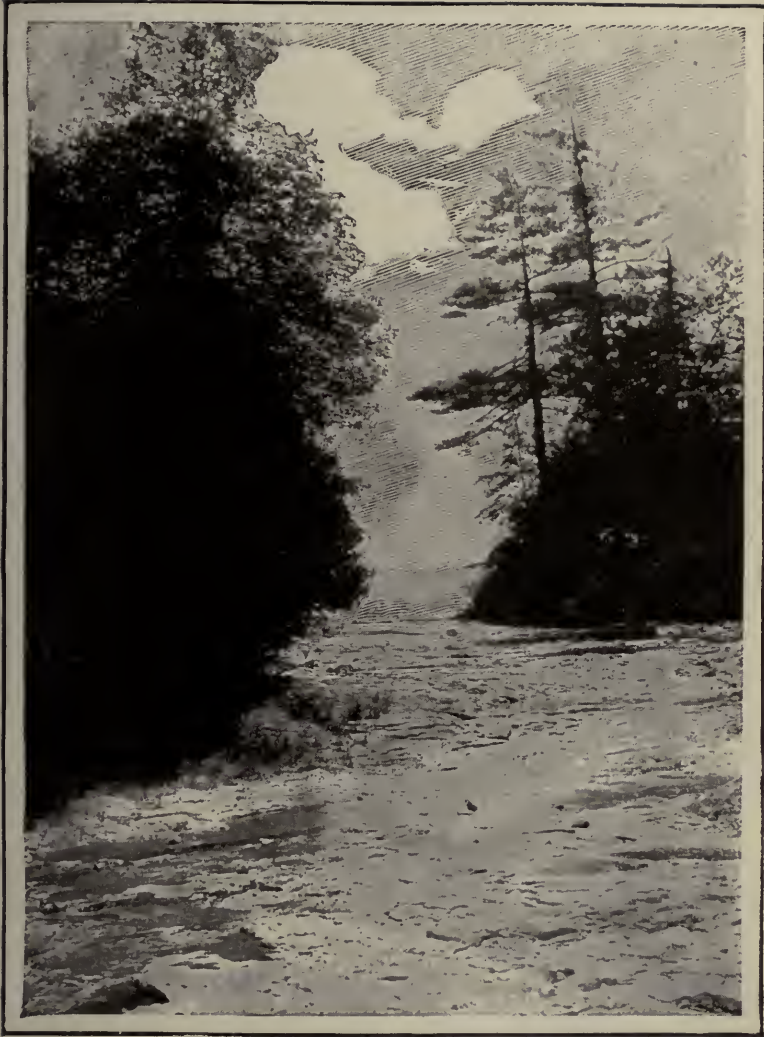
side without lowering it on the other; and Judge Potter argued that the people of both countries could require their National Governments to maintain its level. If the Federal Government requires its consent, as it has required it in the past for the building of a boom, or winged dam, in the Niagara river, to protect the intakes of the power companies from ice, it certainly would seem as if its consent could be made a condition precedent to the diversion of the water itself, and that by a treaty between the two Governments all further diversions of water could be prevented.

The possession of the State Reservation by the General Government would simply authorize it to refuse diversion along this water front, as the State of New York may now refuse. Such ownership would not add in the slightest to the power of the General Government to prevent the diversion of the water from an international highway. These suggestions seem to make it plain that any cession from the State of New York to the Federal Government would not add in the slightest to the protection of the falls, since it would confer no power on the General Government which it does not already possess.

I have thus far assumed that the State of New York would not permit any diversion of the water below Port Day or within the limits of the State Reservation. It must, however, be confessed that such permission is legally possible, since it may be given by the Legislature. For twenty years the Commissioners of the Reservation have wielded all their power against every attempt to invade the limits of their jurisdiction, and thus far have been completely successful. Not a drop of Niagara is diverted from the river within the Reservation for commercial purposes, and it is to the credit of the entire State that twenty years ago it drew a cordon around the Falls within its jurisdiction and that portion



THE CHANNEL BETWEEN GOAT ISLAND AND ONE OF
THE THREE SISTERS ISLANDS AS IT USUALLY LOOKS



THE CHANNEL SHOWN IN THE OPPOSITE
PICTURE, AT A LOW STAGE OF WATER

of the river reaching to Port Day, and that cordon has been a dead line which no individual or corporation with designs upon the majesty of the cataract has been allowed to pass. It does not seem morally possible that this policy could be changed, but it would be a wise safeguard were a constitutional amendment adopted prohibiting further diversion of water, and such an amendment I deem it the clear duty of the Legislature to submit to the people of the State at the earliest practicable moment. Such an amendment was recommended by a committee in the Constitutional Convention of 1894, but the convention refused to adopt it. The present situation was clearly foreseen by the late Andrew H. Green, for many years president of the Commissioners, who in every possible way gave his great influence to the protection of the Falls, not only in the work of the Commission but in the Constitutional Convention. The situation, however, was not as well understood then as now, as may be seen from the fact that the Legislature of 1904 adopted a joint resolution memorializing the President of the United States to negotiate a treaty with Great Britain to prevent further diversion of water. There can be but little doubt that if the Legislature would submit to the people the suggested amendment it would be ratified by the popular vote.

As an evidence of good faith in dealing with the authorities controlling the river upon the Canadian side, and also for the purpose of bringing to bear a moral pressure of great weight, it is desirable not only that such an amendment to the State Constitution be proposed and adopted, but also that the Congress of the United States should pass an act forbidding further diversion of water from the river within American boundaries above the Falls.

The situation, then, as it appears to the writer, may be recapitulated as follows:

1. The authorized diversion of the waters of the Niagara river, when exercised to its full extent, will seriously but not wholly impair the Falls.

2. That further suggested diversion should be prevented, if possible.

3. That the transfer of the State Reservation at Niagara Falls from the State of New York to the Federal Government would be valueless as a remedy against the proposed evil.

4. That this diversion can be absolutely prevented by the joint action of the Government of the United States and the proper British authorities.

5. That it is desirable that the Legislature of the State of New York should revoke all charters for the diversion of water under which operations have not been commenced in good faith.

6. That an amendment to the Constitution of the State should be adopted providing for the perpetual protection of the waters of Niagara river.

7. That the Congress of the United States should exercise at once all the powers it may possess to prevent such diversion.

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